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March 4, 2016

Department of Conservation  
801 K Street, MS 24-02  
Sacramento, CA 95814  
ATTN: UIC Discussion Draft

Re: Pre-Rulemaking Draft Regulations issued January 21, 2016 (Discussion Draft), proposing updates to Underground Injection Control Regulations in Title 14. Natural Resources, Division 2. Department of Conservation, Chapter 4. Division of Oil, Gas and Geothermal Resources, Subchapter 1. Onshore Well Regulations.

Central Valley Gas Storage, LLC (CVGS) operates a Division of Oil, Gas and Geothermal Resources (DOGGR) approved and California Public Utilities Commission certified natural gas storage field in Colusa County, California. CVGS hereby submits the following comments and recommendations regarding the referenced Discussion Draft. These comments also are being provided via e-mail to DOGGR at the e-mail location specified on its Notice of Pre-Rulemaking Comment Period.

#### Section 1724.6(c)

The updates proposed specify that the approval of an underground injection project is at the Division's ongoing discretion and the Project Approval Letter is subject to suspension, modification or rescission. CVGS feels that this language is very broad and would prefer that this section provide more specific discussion regarding the types of events or threats that could lead the Division to exercise such discretion, conceptually similar to the language contemplated for Section 1724.6(d).

#### Section 1724.6(d)

The proposed language requires that injection operations cease immediately if the Division determines that operations are inconsistent with the terms of a current Project Approval Letter or if the project otherwise poses a threat. CVGS agrees that immediate action may be appropriate when an event poses a significant immediate threat, but suggests that if there is an inconsistency with the terms and conditions of the Project Approval Letter, the storage facility operator be given a period of time to bring the project into compliance before being required to cease all injections.

#### Section 1724.7(a)

CVGS recommends certain clarifications in Section 1724(a)(1)(E). The first item for which CVGS seeks clarification is requirements for natural gas storage facility observation wells, which are active wells that are not used for production, but rather for reservoir pressure monitoring. CVGS wants to differentiate these wells from "idle" wells. This is particularly critical with regards to subsection (ii), which might otherwise suggest that such observation wells must be plugged if they are deemed to be "idle" since they are not used for production. The second item CVGS seeks to clarify is that abandoned wells in the area of review for a natural gas storage project that extend to a depth that is at or below the storage zone, but that do not encounter the geologic formation in which gas is injected for storage should not be subject to the requirements of (i) in this Section. One example would be a plugged and abandoned well that was a "dry hole" when it was originally drilled because it missed the reservoir. CVGS is concerned that the language in the Discussion Draft would lead to unnecessary requirements for such a well strictly

because it is still within  $\frac{1}{4}$  mi of a storage well. In order to address these points, CVGS suggests the following redlined clarifications:

- (E) Casing diagrams, including all data specified in Section 1724.7.1, of all idle, plugged and abandoned, gas storage observation, or producing wells that are within the area of review and that are in the same or a deeper zone as the injection project, including directionally drilled wells that intersect the area of review in the same or deeper zone. The casing diagrams must demonstrate that the wells will not be a potential conduit for fluid to migrate outside of the approved zone of injection or otherwise have an adverse effect on the project or cause damage to life, health, property, or natural resources. At a minimum, the casing diagrams must demonstrate that:
- (i) Plugged and abandoned wells that penetrate the storage reservoir have cement across all perforations...
  - (ii) Wells that are not plugged in abandoned and that have not been used for injection, monitoring or production for more than...

CVGS also notes that there is no discussion in (E) regarding what occurs in the event that casing diagrams do not demonstrate the requirements of this subsection. Section 1724.7(a)(1)(G) does discuss activities which may be performed to demonstrate integrity and, for clarity, it appears that (E) should reference that wells that fail to meet requirements are subject to the remedial activities in (G).

Section 1724.7(a)(3)(C) discusses groundwater monitoring. CVGS follows a groundwater monitoring regimen approved during its certification process in which results of groundwater sampling are periodically reported to both DOGGR and the Regional Water Quality Control Board (RWQCB). RWQCB consultation occurs only if designated methane concentration levels are present and remedial action is being planned. CVGS suggests that the language in (C) be changed to:

... documentation shall be provided of the results reported to, or of any of the consultation with, the State Water Resources...

#### Section 1724.7.1(a)(4)

CVGS anticipates that the language in this section means that operators need to submit casing diagrams as graphical diagrams and also submit casing information as a flat data set, but seeks clarification that this is correct. For wells that were plugged and abandoned by prior operators, CVGS notes that some of the information requested in this section may not be available from the historic operating records of the prior operators.

#### Section 1724.10(g)

CVGS respectfully requests retaining the current exception for pipeline-quality gas injection wells in this section. Many modern gas storage wells installed in California within the past 20 years were designed without tubing and packer, but with alternate features that adequately protect USDW and oil zones. The injection and withdrawal wells at CVGS have been designed to modern standards for natural gas storage and CVGS just constructed the wells and placed them into service less than four years ago. As reviewed and approved by DOGGR in its 2010 Storage Permit Application, CVGS wells are not equipped with tubing on packer designs, but they are designed with an  $8\frac{5}{8}$  inch production casing that is fully cemented from the storage zone to surface. The production casing is inside a  $13\frac{3}{8}$  inch surface casing, which is fully cemented from the casing shoe to the surface. Because the wells are completed with full cementing, zones between the storage sands and the surface are adequately protected. CVGS also conducts annual temperature logging on all of its wells to confirm that its casings are not leaking. In CVGS' particular case, redesigning and modifying its injection and withdrawal wells to a tubing and packer standard after the fact would require millions of dollars in expenditures. CVGS believes such expenditures are not justified given that the full cementing provides a similar level of protection. Furthermore, a requirement to inject and produce gas through a smaller diameter tubing configuration would result in significant loss of

deliverability and be detrimental to facility performance.

It also should be noted that reworking wells at a point in time when they are not experiencing leaks would result in releasing significant amounts of methane to the atmosphere as part of the rework process. Furthermore, as wells reworked to a tubing and packer standard are inspected in the future, casing inspections would require removal of the tubing, which would necessitate additional significant releases of methane, which would run contrary to the State's objective of minimizing such emissions. CVGS recommends that fully cemented wells that are performing properly should remain operating with their current design, under monitoring as contemplated by Section 1724.10(k).

#### Section 1724.10(h)

CVGS anticipates maintaining ongoing measurement data related to the requirements in Section 1724.10, subsections (c), (d), (e), (k) and (m), as well as data related to the new requirements in Section 1724.9, and maintenance records which will facilitate compliance with Section 1724.10(f). CVGS believes that evaluating this data and maintaining it should meet the requirements of this subsection. If additional data will be required, CVGS would appreciate more specificity regarding the data it should be maintaining to comply with this provision.

#### Section 1724.10(i)

Modern gas storage wells that are utilizing designs other than a tubing and packer design may not be suitable for periodic casing pressure testing. That is the case with CVGS' injection and withdrawal wells. Historically, CVGS has been instructed by DOGGR that the annual MIT requirement may be satisfied by a static temperature survey and such temperature survey should be included as an option in this section for wells that do not use a tubing and packer design.

#### Section 1724.10(k)

This section proposes that facilities be 'continuously monitored', yet certain of the items specified are more suitable for periodic monitoring with a specific frequency.

For item (1), CVGS recommends that operability of safety systems be inspected once every six months as newly specified by Section 1724.9(d). Other inspections specified by item (1) should occur with a specified frequency, and the frequency for such inspections should be reviewed and tied to appropriate levels for gas storage facility wells based on anomalies and any evidence of leaking. For example, the frequency for well inspections could begin as daily, but in the event that daily manual inspections show no leak evidence or anomalies for 90 consecutive days, the inspection frequency could be reduced to weekly. If a weekly well inspection subsequently detected a significant anomaly that could indicate a leak, the well would be returned to a daily inspection frequency schedule until any leak is identified and repaired or until such anomaly does not recur in subsequent inspections for an additional 90-day period.

CVGS believes items (2) and (3) can be monitored continuously.

For item (4), monitoring is most appropriately conducted periodically with a specified frequency. As with item (1), the frequency should be dependent on the data being discovered and the performance of the well.

The objective of CVGS is to operate its facilities in a safe and reliable manner and in compliance with applicable laws, rules and regulations. CVGS appreciates the opportunity to comment on the Discussion Draft. If there are any questions concerning these comments, please contact me at (630) 388-2010 or e-mail me at [therman@aglresources.com](mailto:therman@aglresources.com).

Sincerely,

A handwritten signature in dark ink, appearing to read "Tim J. Hermann". The signature is fluid and cursive, with the first name "Tim" and last name "Hermann" clearly distinguishable.

Timothy J. Hermann  
Vice President  
Storage and Peaking Operations